

Acknowledgments

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REPLY

A Clinical Trial of 3 Doses of Transdermal 17β -estradiol for Preventing Postmenopausal Bone Loss: A Preliminary Study

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To the Editor,

We would like to respond to the letter from Wen-Ling Lee, Hsiang-Tai Chao and Peng-Hui Wang. First, thank you for your important comments on our paper.

Second, you mention that recent randomized clinical trials of postmenopausal hormone therapy (HT) have informed clinical decision-making, but several key questions remain unanswered. Observation studies suggest that HT prevents coronary heart disease

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(CHD), whereas randomized clinical trial has not confirmed a cardioprotective effect. A major difference between participants in observational studies and those in clinical trials is timing of initiation of HT in relation to menopause onset. Women taking postmenopausal hormones in observational studies typically start therapy in early postmenopause, whereas clinical trial participants are often randomly assigned to hormones long after menses have ceased. In the United States, the average age at menopause is 51 years. The 20-year Nurses' Health Study (NHS) is 1 of the largest prospective investigations of HT and CHD incidence. The baseline ages of NHS participants ranged from 30 to 55 years, and approximately 80% of cohort members who opted to use HT did so within 2 years of menopause. Among 70,533 postmenopausal participants, current use of HT was associated with a relative risk of a major coronary event of 0.61 (95% confidence interval, 0.52–0.71). In contrast, the mean baseline ages of the Women's Health Initiative (WHI) study and the Heart and Estrogen/progestin Replacement Study (HERS) were 63 and 67 years, respectively; the majority of these women had been postmenopausal for more than a decade at the time of enrolment.

Administration of exogenous hormones immediately after oophorectomy, during the early stages of atherosclerosis, reduced the extent of plaque by 50%.¹ Most atherosclerosis progression (imaging) trials in humans have been conducted among women with significant coronary lesions at baseline and have not shown estrogen to be effective in slowing the rate of arterial narrowing.^{2,3} However, 1 study of younger postmenopausal women (50–59 years old) showed that the calcified plaque burden in the coronary arteries was lower in women assigned to estrogen than in those assigned to placebo.⁴ The Estrogen in the Prevention of Atherosclerosis Trial (EPAT), which did not require participants to have significant lesions at entry, found that micronized 17 β -estradiol did retard the progression of carotid atherosclerosis.⁵ Subgroup analysis of WHI data also revealed that women who had initiated hormone therapy closer to menopause tended to have reduced CHD risk compared with the increase in CHD risk among women more distant from menopause.⁶

Transdermal estrogen may be less thrombogenic than oral estrogen. The data from recent case-control studies in France and the Estrogen and Thromboembolism Risk (ESTHER) study showed that transdermal estrogen was not associated with venous thromboembolism. There is now a critical mass of data to support the hypothesis that time since menopause and route

of estrogen administration may importantly influence the benefit–risk ratio associated with HT. Thus, a 5-year randomized trial (the Kronos Early Estrogen Prevention Study) will evaluate the effectiveness of low-dose oral estrogen and transdermal estradiol in preventing progression of atherosclerosis in recently postmenopausal women.

Third, we used estriol 2 mg/day as the control group to prevent a high dropout rate in the HT study. According to our experience, if we use placebo control for early postmenopausal women, the dropout rate would be about 40–50%.

Fourth, effective low dose is the current trend for HT. Current evidence from controlled trials indicates that low-dose HT appears effective and safe. This makes it a good choice for the alleviation of climacteric symptoms, and for this purpose, long-term administration of low-dose HT does not seem to impose serious health risks.^{7,8} Thus, we suggest estradiol gel of 1.25 g/day.

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